Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

December 16, 2015

Tom Moe
USS Corporation
P.O. Box 417
Mountain Iron, MN 55768

RE: Project: NPDES-LINE 3 Wkly
Pace Project No.: 1258383

Dear Tom Moe:
Enclosed are the analytical results for sample(s) received by the laboratory on December 10, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Heather R Zika
heather.zika@pacelabs.com
Project Manager

Enclosures

cc: Terri Sabetti, Northeast Technical

Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

CERTIFICATIONS

Project: NPDES-LINE 3 Wkly
Pace Project No.: 1258383

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842015-1
Oklahoma Department of Environmental Quality

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

SAMPLE SUMMARY

Project: NPDES-LINE 3 Wkly
Pace Project No.: 1258383

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1258383001	**WS-002 Scrubber Make-up**	Water	12/10/15 09:05	12/10/15 16:00
1258383002	**WS-003 Thickener Overflow**	Water	12/10/15 08:55	12/10/15 16:00

Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

SAMPLE ANALYTE COUNT

Project: NPDES-LINE 3 Wkly
Pace Project No.: 1258383

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1258383001	**WS-002 Scrubber Make-up**	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1258383002	**WS-003 Thickener Overflow**	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V

Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

ANALYTICAL RESULTS

Project: NPDES-LINE 3 Wkly
Pace Project No.: 1258383

Sample: WS-002 Scrubber Make-up **Lab ID: 1258383001** Collected: 12/10/15 09:05 Received: 12/10/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Calcium, Dissolved	**96.6**	mg/L	5.0	0.29	10	12/14/15 11:40	12/15/15 11:51	7440-70-2	
Magnesium, Dissolved	**207**	mg/L	5.0	0.67	10	12/14/15 11:40	12/15/15 11:51	7439-95-4	
Total Hardness, Dissolved	**1090**	mg/L	100	50.0	10	12/14/15 11:40	12/15/15 11:51		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**795**	mg/L	20.0	0.89	10		12/15/15 04:55	14808-79-8	

Sample: WS-003 Thickener Overflow **Lab ID: 1258383002** Collected: 12/10/15 08:55 Received: 12/10/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Calcium, Dissolved	**1060**	mg/L	5.0	0.29	10	12/14/15 11:40	12/15/15 12:00	7440-70-2	
Magnesium, Dissolved	ND	mg/L	5.0	0.67	10	12/14/15 11:40	12/15/15 12:00	7439-95-4	
Total Hardness, Dissolved	**2640**	mg/L	100	50.0	10	12/14/15 11:40	12/15/15 12:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**1530**	mg/L	40.0	1.8	20		12/15/15 05:18	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

QUALITY CONTROL DATA

Project: NPDES-LINE 3 Wkly
Pace Project No.: 1258383

QC Batch: MPRP/6277
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 MET Dissolved
Associated Lab Samples: 1258383001, 1258383002

METHOD BLANK: 274784 Matrix: Water
Associated Lab Samples: 1258383001, 1258383002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	0.029	12/15/15 11:22	
Magnesium, Dissolved	mg/L	ND	0.50	0.067	12/15/15 11:22	

LABORATORY CONTROL SAMPLE: 274785

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	52.6	105	85-115	
Magnesium, Dissolved	mg/L	50	51.0	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 274786 274787

Parameter	Units	1258355001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	331	50	50	390	386	117	109	70-130	1	20	
Magnesium, Dissolved	mg/L	121	50	50	170	170	98	97	70-130	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

QUALITY CONTROL DATA

Project: NPDES-LINE 3 Wkly
Pace Project No.: 1258383

QC Batch: WETA/15043 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 1258383001, 1258383002

METHOD BLANK: 274723 Matrix: Water
Associated Lab Samples: 1258383001, 1258383002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	0.089	12/14/15 21:38	

LABORATORY CONTROL SAMPLE: 274724

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	48.2	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 274725 274726

Parameter	Units	1258359001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	25.9	500	500	518	518	98	98	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 274727 274728

Parameter	Units	1258295001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	152	50	50	201	201	99	99	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

QUALIFIERS

Project: NPDES-LINE 3 Wkly
Pace Project No.: 1258383

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-V Pace Analytical Services - Virginia

Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NPDES-LINE 3 Wkly
Pace Project No.: 1258383

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1258383001	**WS-002 Scrubber Make-up**	EPA 200.7	MPRP/6277	EPA 200.7	ICP/4826
1258383002	**WS-003 Thickener Overflow**	EPA 200.7	MPRP/6277	EPA 200.7	ICP/4826
1258383001	**WS-002 Scrubber Make-up**	EPA 300.0	WETA/15043		
1258383002	**WS-003 Thickener Overflow**	EPA 300.0	WETA/15043		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request

The Chain-of-Custody is a LEGAL DOCUMENT

WO# : 1258383

PM: HRZ Due Date: 12/24/15

CLIENT: USS CORP

1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	
Company: USS Corporation	Report To: Tom Moe	Attention:	
Address: P.O. Box 417	Copy To:	Company Name:	
Ft. Iron, MN 55768		Address:	
Email:	Purchase Order #:	Pace Quote:	Regulatory Agency:
Phone: Fax:	Project Name: NPDES-LINE 3 Wkly	Pace Project Manager: heather.zika@pacelabs.com,	State / Location:
Requested Due Date:	Project #:	Pace Profile #:	

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): LAB FILTERED: SO4	Lab FILTERED: Ca,Mg,Hard	Residual Chlorine (Y/N)	
1	WS-002 Scrubber Make-Up	WT		12/10/15	0905				2										X	X		LF,LF
2	WS-003 Thickner Overflow	WT		"		0855			2										X	X		LF,LF
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Tom Moe/USS	12/10/15	1600	CR	12/10/15	1600	3.1	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: THOMAS A. MOE

SIGNATURE of SAMPLER: Thomas A. Moe DATE Signed: 12/10/15

Pace Analytical®	Document Name: Sample Condition Upon Receipt Form	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: F-VM-C-001-Rev.09	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: USS Corporation

Project #: WO#: 1258383

1258383

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other: _____

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☒ Other: Hanpad **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 2.8 **Cooler Temp Corrected °C:** 3.1 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: +0.3 **Date and Initials of Person Examining Contents:** 12/10/15 ms

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☒ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☒ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☐ Yes	☒ No	☐ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): _____				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Heather Zeh **Date:** 12/11/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)